

Remarks

In an office action dated 23 May 2002, the Examiner rejects claims 1-18 (all pending claims). Applicants amend claims 1, 10, and 16. Applicants respectfully traverse the Examiner's rejections. Claims 1-18 (all pending claims) remain in the application. In light of the remarks, Applicants respectfully request that the Examiner allow this application. Alternately, Applicants request the determination that this office action is final be removed and prosecution of this Application be continued.

In the office action, the Examiner rejects claim 1 as being unpatentable under 35 U.S.C. 103 (a) as being unpatentable over U.S. Patent Number 6,226,644 issued to Ciscen et al. (Ciscen). As stated in § 2143.03 of the MPEP, in order for a claim to be prima facie obvious all of the claimed limitations must be taught in the references. Any combination or modification to the prior art must be expressly or implicitly in the reference as stated in § 2144 of the MPEP. Applicants assert that the Examiner has not made a prima facie showing that claim 1 is obvious from Ciscen.

Ciscen teaches a system in which process applications register with a local router application to receive data transmitted between applications across a network (See Column 2, line 33- Column 3, line 22). Ciscen teaches a "data centered" approach for distributing data among process applications. (See Col. 4, lines 59-60) Data is transmitted as data objects to keep the data in a consistent format (Col. 5, line 1- 12). The structure of these data objects is taught in the specification at Col. 5 line 13 - Col. 7 line 5. In Ciscen, a process application or router application registers an interest in receiving data objects having a certain property, such as data objects sent from a particular address (See Column 8, line 61 - Col. 9 , line 46) When a data object is received by a router, the router reads an interest table to determine which

processes should receive the data object (See Col. 9 lines 62 - Col. 11 line 41). Start-up of the system is described by Col. 12, line 65- col. 14, line 27. Disconnection of a process application or router application from the system is described in Col. 14 line 28- Col. 15 line 33. Changes to the interests of a process application or a router process is described in Col. 15, line 34- Col. 16, line 25. The handling of a data object received by a router process is taught in Col. 16, line 26- Col. 22, line 47.

Claim 1 recites a method in which database a subsystem storing configuration data for a network receives a request from a subsystem to register for notification of a change to configuration data stored in the database subsystem and registering the subsystem for notification. From the above description, it can be seen that Ciscon does not teach a database subsystem that stores configuration data registering other subsystems for notification of changes to configuration data. As stated above, Ciscon teaches a system in which processes register to receive data objects of a certain type transmitted across the system. Ciscon does not teach a database subsystem that maintains configuration data for a network. The only teaching in Ciscon that is remotely similar to a database that stores configuration data is the teaching that a router application maintains a list of connections. However, the router application does not receive requests from other subsystems or processes for notification when a change in the connection data received.

Ciscon and claim 1 are related to different devices. Claim 1 relates to a method for providing notification of configuration data of a network in a router device. The various subsystems in the router device request notification of changes to configuration data stored in a database and are registered for notification when the configuration data is changed. Ciscon, on the other hand, teaches a system having several different processing devices that each execute process applications that communicate over a network and router applications in each device that facilitate

communication between the processes being executed by the processing devices. Cisco teaches how data is transmitted to the application processes by the processes registering with the router application for data to be received. There is no teaching in Cisco that the various process application in a device register with the router application or another application to be notified when configuration of the network is changed. For, these reasons amended claim 1 is not taught by Cisco. Thus applicant respectfully requests that the rejection be removed.

The Examiner states that it would be obvious to those skilled in the art to modify Cisco to transmit a request for notification of changes to configuration data and to register a subsystem for notification in response to receiving the request. **This is an assertion that one skilled in the art would modify the art. The Examiner has offered no motivation or suggestion that this modification is desired.**

MPEP § 2143.01 clearly states that the Examiner must provide motivation or a suggestion of the modification. The suggestion or motivation must come from one of three sources, the problem to be solved, the teaching of the prior art or from knowledge of one of ordinary skill in the art. The Examiner has offered no such motivation or suggestion in this office action. The citations in Cisco given by the Examiner teach how a process application or router application register to receive type of transmitted data. There is no mention of registering for notification of a configuration change in the system or of subsequent notification or a reason as to why one would do so. Therefore, if the Examiner wishes to maintain this rejection a motivation or suggestion must be supplied otherwise the rejection is improper and must be removed.

Claims 2-9 are dependent upon amended claim 1. Therefore, claims 2-9 are allowable for the same reasons as amended claim 1 and all other rejections to claims 2-9 are moot. Thus, Applicants respectfully request amended claim 2-9 be allowed.

Amended claim 10 claims a device tangibly embodying the method recited in amended claim 1. Thus, amended claim 10 is allowable for the same reason as amended claim 1. Therefore, Applicants respectfully request that amended claim 10 be allowed.

Amended claims 11-15 are dependent upon amended claim 10. Thus, amended claims 11-15 are allowable for at least the same reason as amended claim 10. Therefore, Applicants respectfully request that amended claims 11-15 allowed.

Amended claim 16 recites a database subsystem that includes a notification unit that notifies registered subsystems when a change to router configuration information is made. Therefore, amended claim 16, like amended claim 1, is allowable of Ciscon and Applicants respectfully request that amended claim 16 be allowed.

Claim 17 is dependent upon amended claim 16. Thus, claim 17 is allowable for the same reason as amended claim 16 and Applicants request claim 17 be allowed.

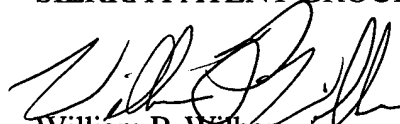
Amended claim 18 recites a memory storing instructions and a processor executing the instructions which provide the router operating system recited in amended claim 16. Thus, amended claim 18 is allowable for at least the same reason as amended claim 16 and Applicants respectfully request that amended claim 18 be allowed.

Applicant further argues that the determination the office action is improper. As stated in MPEP § 706.07(a) second or subsequent office actions shall be final except where the examiner introduces a new ground of rejection neither necessitated by applicant's amendment nor based on information provided by the applicant. In this office action, the Examiner issued a new grounds for rejection by changing the rejection based upon Ciscon from a 35 U.S.C. § 102(e) rejection to 35 U.S.C. § 103(a) rejection. The change was not necessitated by the Applicants amendments which merely corrected editorial errors in the claim. Instead. The change was based

merely based upon the fact that the Examiner had to rely on one skilled in the art modifying the Ciskon patent. Therefore, Applicant should be given an opportunity to respond to such a change in the rejection. Otherwise all issues as to whether this art makes the claims unpatentable are not resolved. Thus Applicant respectfully requests that the Examiner remove the final rejection in this case or allow the claims.

If the Examiner has any question regarding this amendment or this application in general, the Examiner is invited to call the undersigned at 775-886-9500x131.

Respectfully submitted,
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Dated: July 22, 2002

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Marked Up Version of the Claims

1. (Twice Amended) A method for transacting router notification of changes to router configuration data in a router device using a database subsystem, said database subsystem storing said router configuration and being operatively coupled for communication with a plurality of router subsystems, comprising:

(a) transmitting a notification registration request by a first of said plurality of subsystems to said database subsystem, said registration request indicating configuration data for which said first subsystem requires registration for notification of changes to said configuration data;

(b) receiving said notification registration request by said database subsystem;
and

(c) registering said first of said plurality of subsystems for notification by said database subsystem.

2 The method of claim 1 further comprising maintaining said router configuration data using a tree structure having a plurality of tuples by said database subsystem.

3. (Amended) The method of claim 2 wherein said registering said first of said plurality of subsystems for notification further comprises:

(a) finding a requested tuple storing said configuration data for which notification is requested; and

(b) setting the notification flag for said requested tuple.

4. The method of claim 3 wherein said registering said first of said plurality of subsystems for notification further comprises:

(a) determining whether said notification registration request included a request for notification of a name space; and

(b) setting a notification flag for children nodes of said requested tuple responsive to a determination that said notification registration request included said notification of a name space.

5. The method of claim 1 further comprising:

(a) transmitting a notification unregistration request by said first of said plurality of subsystems to said database subsystem, said unregistration request indicating the configuration data for which said first subsystem requires unregistration of said notification;

(b) receiving said notification unregistration request by said database subsystem; and

(c) unregistering said first of said plurality of subsystems for notification by said database subsystem.

6. (Amended) The method of claim 1 further comprising:

(a) transmitting a router configuration transaction request by a second of said plurality of subsystems to said database to said plurality of subsystems;

(b) receiving said router configuration transaction request by said database subsystem;

(c) carrying out said requested transaction by said database subsystem, said transaction changing said router configuration data maintained by said database subsystem;

(d) determining each of said plurality of subsystems registered for notification of changes to said router configuration data; and

(e) notifying said each of said plurality subsystems determined to be registered for notification of changes to said router configuration data.

7. The method of claim 6 wherein said router configuration transaction request is a create request.

8. The method of claim 6 wherein said router configuration transaction request is a delete request.

9. The method of claim 6 wherein said router configuration transaction request is a modify request.

10. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method for transacting router notification in a router device using a database subsystem, said database subsystem storing router configuration data and being operatively coupled for communication with a plurality of router subsystems, said method comprising:

(a) transmitting a notification registration request by a first of said plurality of subsystems to said database subsystems, said registration request indicating configuration data for which said first of said plurality of subsystems requires registration for notification of changes to said configuration data;

(b) receiving said notification registration request by said database subsystem;
and

(c) registering said first of said plurality of subsystems for notification by said database.

11. The program storage device of claim 10, and method further comprising:
maintaining said router configuration data using a tree structure having a plurality of tuples by said database subsystem.

12. The program storage device of claim 11, wherein said registering said first of said plurality subsystems for notification further comprises:

- (a) finding a requested tuple for which notification is requested; and
- (b) setting the notification flag for said requested tuple.

13. The program storage device of claim 12, wherein said registering said first subsystem for notification further comprises:

- (a) determining whether said notification registration request includes a request for notification of a name space; and
- (b) setting a notification flag for children nodes of said requested tuple responsive to a determination that said notification registration request includes said notification of a name space.

14. The program storage device of claim 10, said method further comprising:

(a) transmitting a notification unregistration request by said first of said plurality of subsystems to said database subsystem, said unregistration request indicating the configuration data for which said first of said plurality of subsystems requires unregistration;

(b) receiving said notification unregistration request by said database subsystem;
and

(c) unregistering said first of said plurality of subsystems for notification by said database subsystem.

15. The program storage device of claim 10, said method further comprising:

(a) transmitting a router configuration transaction request by a second one of said plurality of subsystems of said database subsystem;

(b) receiving said router configuration transaction request by said database subsystem;

(c) performing said requested transaction by said database subsystem, said transaction changing said router configuration data maintained by said database subsystem;

(d) determining each of said plurality of subsystems registered for notification of changes to said router configuration data; and

(e) notifying each of said plurality of subsystems determined to be registered for notification of changes to said router configuration data.

16. (Twice Amended) A router operating system for a router device comprising:

a database subsystem;

a plurality of client subsystems, each operatively coupled to said database subsystem; and

a database operatively coupled to said database subsystem to store router configuration information, said database subsystem further comprising a notification unit, said notification unit configured to provide notification of changes to router configuration information to each of said plurality of subsystems registered to receive notification of changes to said router configuration information.

17. The router operating system of claim 16 wherein said database is structured and configured as a tree database.

18. In a router device having a processor and memory, a router operating system stores as instructions in said memory and executed by said processor, said router operating system comprising:

- a database subsystem;

- a plurality of client subsystems, each operatively coupled to said database subsystem; and

- a database operatively coupled to said database subsystem and that stores router configuration information, said database subsystem further comprising a notification unit, said notification unit configured to provide notification of changes to said router configuration information to each of said plurality of client subsystems registered to receive notification.